TRANSBOUNDARY GAS GROUP

MEETING NOTES

April 4-5, 2001
Northwest Power Planning Council Headquarters
Portland, Oregon

I. Greetings and Introductions.

Facilitator Dan Phalen, Environmental Protection Agency, welcomed everyone to the meeting, held April 4-5 at the Northwest Power Planning Council's offices in Portland, Oregon. Phalen covered a few housekeeping items, then led a round of introductions and a review of the agenda.

Please note that this is a summary, not a verbatim transcript, of items discussed at this meeting, decisions made and work products assigned. Copies of any enclosures referenced in these minutes can be obtained by calling Kathy Ceballos of NMFS at 503/230-5420.

II. Framework Plan – Review of Priority Action Items.

Les Swain began this agenda item by distributing Enclosure C, an excerpt from the framework plan project descriptions. He noted that the Bureau of Reclamation is to be commended for producing the framework plan. Swain said 14-15 TGG tasks that were originally developed were organized under six broad categories – additional monitoring information, computer modeling, biological investigations, structural characteristics, facility operations and framework plan integration. He then described how the activities under these broad categories were prioritized. Swain finished by touching on the four highest-priority tasks on which the TGG has been focusing its efforts in recent months:

- Project # 1: Characterize transboundary existing gas conditions.
- Project # 2: Identify data and information needs for screening models.
- Project # 3: Identify structural alternatives for transboundary gas planning.
- Project # 4: Transboundary dissolved gas management status report.

III. Project #1: Characterize Transboundary Existing Gas Conditions.

IV. Project #2: Identify Data and Information Needs for Screening Models.

A. Canada. Dana Schmidt began his presentation with an overview of his firm's recent

Columbia River Integrated Environmental Monitoring Program (CRIEMP) monitoring work – sites monitored and data collected. He noted that the geographic focus of the Canadian monitoring effort includes the reaches below Arrow Lake, Kootenay Lake and the Pend Oreille system, then touched on some of the specific sites monitored in 2000. Schmidt noted that, on the Canadian side of the border, most monitoring is done for a particular purpose, rather than simply to collect data; he gave the example of the monitoring of individual spillways at Brilliant Dam to evaluate the effectiveness of various gate settings.

Schmidt summarized this work by saying that the CRIEMP 2000 monitoring focused primarily on further refinement of Brilliant Dam operations. The CRIEMP study recommended that future monitoring in the system be aimed at evaluating new operations – those that are not already in the historical data set – or changes in structure. As a result of the 2000 study, new operational rules are in place, intended to avoid the operation of spill bay 1, which is a high gas producer, and to maximize the operation of spill bays 7 and 8, which produce relatively little gas.

Schmidt noted that, because of the expansion proposal at Waneta Dam, a proposal has been made for additional monitoring at that project. That would be interesting, he said, because we probably have the least understanding of gas formation processes at Waneta than at any other project on the Canadian side of the border, because of the problem with mixing zones. Unfortunately, due to the low-flow situation this year, it probably won't be possible to gather any data in 2001.

We're doing another study, now almost finished, for CRIEMP, said Schmidt, looking at the distribution of fish below the Canadian facilities. The purpose of the study is to assemble all of the available fisheries data to develop a seasonal risk factor for the affected species – that is, at what life-history stage these fish are inhabiting shallow water, and where, physically, they are. We have divided the system into various zones to organize these data, Schmidt said. Schmidt also described his firm's recent modeling work, intended to establish the levels of biological risk associated with various operational alternatives at Keenleyside and Brilliant Dams. He noted that this effort is intended to help guide water use planning – it goes well beyond gas, and also includes flow.

In response to a question, Schmidt said the proposed new power plant at Brilliant Dam would be 100 MW, or about 13 Kcfs in flow. It would bring the total powerhouse capacity of the project up to 34 Kcfs, which is close to the annual average flow at that point in the river. The expansion is expected to allow the project operators to keep TGP levels below 120% a very high percentage of the time.

In response to another question, Schmidt said another effort is underway to assemble an Access database incorporating all of the gas monitoring and operational data assembled on both sides of the border. B.C. Hydro has already gotten most of its monitoring data put together, he said; the goal is to make that information fully accessible and usable for modelers throughout the region. Schmidt suggested that the other TGG participants spend some time reviewing this database once it is available in order to avoid re-inventing the wheel. That will be an extremely

useful resource once it's up and running, particularly to the extent that we can standardize the format, Mary Lou Soscia observed.

B. United States – Columbia and Snake River Federal Projects.

Ruth Abney of the Corps of Engineers said the 2001 federal monitoring system will be quite similar to the system used in 2000, with roughly 41 monitoring stations on the U.S. portion of the Columbia River system. These stations monitor TDG, temperature, barometric pressure, as well as several other parameters.

The Corps is also working to compile all of the Reasonable and Prudent Activities (RPAs) in the new NMFS Biological Opinion, as well as the monitoring activities associated with those RPAs, Abney said. The Corps is also working with the other Federal parties to develop the one- and five-year water quality plan called for in the BiOp. In response to a question, Soscia explained that the RPAs are the suite of activities the federal operator have committed to implement in order to demonstrate that the Federal Columbia River Power System (FCRPS) is not jeopardizing the survival and recovery of the listed salmonid species.

Abney went through some of the specific RPAs which will impact water quality monitoring in 2001, including RPA 132, a systematic review of the representativeness of the forebay monitoring stations, and RPA 133, which covers TDG modeling in the U.S. side of the Columbia, including the Corps' SYSTDG, MASS 1 and MASS 2 models. RPA 143 recommends the development of a water temperature model, Abney said; preliminary cost estimates have been developed, and BPA has provided comments to the Corps about the development of that model.

Abney also touched on the functions of various NMFS Regional Forum technical teams, including the Water Quality Team and the Technical Management Team, as well as the special modeling and informational tools the Corps is making available to these teams in the 2001 drought year.

C. United States – Douglas County PUD. Rick Klinge said Douglas PUD operates Wells Dam; there is simple straightforward monitoring at that project – one forebay monitor and one tailwater monitor two miles downstream on the east bank of the Columbia. He described the equipment used, as well as specifics about data logging and information transmission; Klinge also provided a brief description of Wells Dam's design, fish passage, spill and gas production characteristics – essentially, an increase of 1% TDG for every 4% of river flow spilled.

Klinge provided some sample TDG data from Wells Dam in 1999 and 2000, noting that, in 1999 and 2000, Douglas County did experience some problems staying below 110% TDG, with around 100 days in which the 110% standard was exceeded in both years. Even this year, when flows are so low, we're already seeing TDG levels of 106%-107% coming at us, which doesn't give us much leeway to spill if we're going to keep tailwater TDG below 110%, Klinge said, adding that additional information is also needed about TDG production during very high

flows at Wells Dam.

Do you feel you have enough information to develop a model of TDG production under various flow, spill and operational scenarios? one participant asked. Klinge replied that, while that possibility has been discussed, Douglas PUD has no plans to model Wells' TDG production at this point. In general, he said, as long as total river flow is below 200 Kcfs, Wells does OK; when flows are higher than 200 Kcfs, however, there is quite a bit of forced spill, and a significant elevation in TDG levels. Douglas is looking into solutions, but at this point, we're not sure there is much we can do to limit TDG production further, Klinge said.

D. United States – Chelan County PUD. Robert MacDonald led this briefing, noting that Chelan PUD owns and operates Rock Island and Rocky Reach Dams. He provided brief descriptions of each of these projects – hydraulic capacity, spillway/powerhouse configuration, forebay and tailrace monitoring stations. He said Chelan PUD does plan to spill this year, despite the fact that spill at the federal projects has been postponed indefinitely – when the fish begin to arrive, probably around mid-April, we will begin to spill, he said.

MacDonald described the spill gate configuration at the two projects, including the gas production characteristics associated with the notched spill gates Chelan uses. He noted that spill is the secondary route of passage at Rocky Reach, which is equipped with a surface collector. At Rock Island, spill is the primary route of fish passage; WES has determined that the notched gates produce more TDG per Kcfs of spill volume than full gates. MacDonald said that, in an effort to reduce TDG production at Rock Island, Chelan PUD designed, built and installed a prototype flow deflector for one unit, and found moderate reduction in TDG production. We think we can do better if we place the deflector at 6-8 feet of submergence, rather than 16 feet; that's our plan for 2001, MacDonald said.

With respect to data gaps, said MacDonald, at Rocky Reach we lack a detailed picture of TDG production dynamics; with two powerhouses and 31 spill bays, there is an almost-infinite array of operational scenarios. We are, however, attempting to fill this data gap, said MacDonald; we have talked about moving our current fixed monitoring sites, but the problem is, you don't see full mixing until you reach the Rock Island forebay.

At Rock Island, we have a more complete picture of how gas is produced under different powerhouse, flow and spill operations, MacDonald said; we have a good handle on the data, but we need further investigation of gas abatement structures so that we can begin abating dissolved gas production at this project.

E. United States – Grant County PUD. Grant County PUD was unable to send a representative to today's meeting.

V. Project #3: Identify Structural and Operational Alternatives for Transboundary Gas Planning.

Paul Carson of Duke engineering led this presentation; he went through a series of overheads, touching on:

- historical TDG problems in the Pacific Northwest from the 1970s through the 1990s,
- the physical processes that cause TDG supersaturation,
- common sources of TDG,
- operational TDG abatement alternatives,
- structural TDG abatement alternatives,
- TDG production dynamics at various projects in the system,
- some TDG mitigation examples.

In reply to a question, Carson briefly described some of his firm's work in the gas abatement arena. He added that copies of his presentation are available directly from him upon request at 425/485-5668.

VI. Upper Columbia River TDG Modeling.

Mary Lou Soscia led this discussion, saying she wanted to share some internal conversations that have been going on at EPA regarding the focus of water quality improvements in the Columbia Basin. There was a meeting of the Washington/BC Environmental Cooperation Council in Vancouver BC last year, she said; at that meeting, it was agreed that there is a need for better data and better TDG monitoring on a transboundary basis. There were some semi-commitments to work on that problem, Soscia said; EPA, for example, was directed to spin off the TMDL development process to look at gas and temperature issues up into Canada, to get a broader understanding of gas issues in the Columbia Basin.

We have been talking, both internally and with contractors, about how to do this work, Soscia said; we have a conceptual project in place, and have obtained provisional funding and resource commitments from a variety of entities. Essentially, we want to try to assemble data that is basinwide – we want to figure out a system that will transform that data and allow it to be input not only into our model, but into an array of different models.

We're interested in developing a user-friendly, visually-based mechanism for displaying this information, which will cover the entire Columbia Basin, Soscia said. While I don't have anything formal to hand out, I just wanted to let you know that this is the direction we're heading. This is a very high priority to our regional administrator, she said, and we do plan to move ahead on this work. She added that EPA has an extremely adept GIS/data display expert who will be taking the lead on this project. Soscia invited anyone with specific questions on this project to contact her directly at 503/326-5873.

The project, then, is in three parts, said Swain: finding the data, transforming the data so that it can be plugged into a number of different models, third, visually arraying the data. Correct, Soscia replied. Any sense of when you would like others to get involved and start

helping out? Swain asked. I would think that, in the next month or two, it would be time for us to sit down and talk, Soscia replied – let me call you in a month or so and we'll set up a venue for that discussion.

Schneider observed that, obviously, there is a mass of information about each of the projects in the system, on both sides of the border. To be useful to this effort, that information has to be boiled down and converted to a common format. Sharon Churchill observed that there are software tools available that can accomplish just this task; she said she will talk to the EPA modelers and data experts about this topic.

Dana Schmidt noted that there is a tremendous variety of conditions under which the various monitoring instruments are measuring TDG throughout the basin; some are measuring only powerhouse flow; some mixed flow etc. If you don't have an understanding of exactly what each station is measuring, he said, it isn't going to give you the best input for your model – you need to know what each data set really represents. Obviously, this is a topic that deserves further discussion, Phalen said; it's an item the TGG may need to add to its to-do list.

VII. SYSTDG Workshop.

Joe Carroll provided an overview of the Corps' SYSTDG model; he began by distributing copies of the Corps' "SYSTDG Primer" (Enclosure I). Carroll then went through a series of overheads, beginning with a brief description of the Columbia River TDG problem itself. Other overheads addressed the recent three-night spill program at Bonneville Dam in support of the Spring Creek Hatchery release; the near-perfect prediction of the TDG values at the Camas/Washougal monitoring station by the SYSTDG model, a description of the SYSTDG model and how it works, a description of the recent two-day workshop to show interested parties how to use the model, and a description of the model outputs. Carroll noted that a total of 26 state, federal, tribal, PUD and private contractor participants attended the SYSTDG workshops; he went briefly through some of the comments received about the model at and after the workshops, as well as the Corps' response to those comments.

VIII. Open Discussion of TGG Project Direction, Scope and Objectives.

Phalen asked the Corps representatives present to describe the important events and direction of the meeting so far. Schneider said that what he heard this morning was in-line with the kind of information the steering committee hoped to hear during these discussions; we need to know where ongoing efforts fit with the vision the Transboundary Gas Group had when it developed the framework last July, he said. Swain said he too is pleased; the question, to him, is whether the TGG is working on the projects that need to get done. From the perspective of the Canadian participants, he said, the answer is yes, although there is still some more information needed on the Waneta situation.

We set out to gather some information, to talk about where more information is needed, said Schneider; I feel we have done that. Soscia said she is always amazed at the attendance at

the TGG's meetings; obviously, she said, there is a great deal of interest in the activities of this group, and perhaps through our discussion at the end of today's session, we can identify some opportunities for moving forward efficiently in the future.

Dave Zimmer suggested that it would be helpful for the TGG to develop clearer priorities about the species, projects and river reaches most at risk. Churchill observed that there is a need for the U.S. and Canadian entities to come to agreement on the priorities for data gathering and monitoring on the Pend Oreille system; otherwise, the flow of data needed for future modeling work could be severely restricted.

Phalen requested general comments from the steering committee regarding Projects 1 and 2. Schneider: said he has been keeping an inventory of items for further discussion; Projects 1 and 2 are essentially projects to characterize the gassing effects of various projects in the system. We have heard that we need more information about the Waneta project in Canada; we have also heard that there is a need for further information about TDG production under extreme operating conditions at Wells Dam, as well as TDG dynamics at Rocky Reach and gas abatement structures at Rock Island Dam. I guess the bottom line is that there is more information that it would be valuable to have at virtually every project in the system, Schneider said; another participant this morning mentioned the need for generic information about the species at risk at each project.

Phalen said one of the tasks that probably needs to be accomplished is to track these data gaps and the TGG's progress toward filling them. Another participant reminded the group of the need to identify the TDG hot spots in the system, and to develop a baseline transboundary gas document.

The remainder of today's session was devoted to a discussion of the future of the Transboundary Gas Group – its project direction, scope and objectives. What kinds of products do we need to talk about at tomorrow's session? Phalen asked.

One thing we've talked about from the very beginning, three years ago, was that, as we develop ideas on things we might do toward the TGG objective – to find ways to manage, control dissolved gas in a cost-effective manner – through studies, modeling and other actions, there are going to be activities that different entities have to play a role in making them happen, said Schneider. Maybe we can talk about that tomorrow – things we can realistically do to begin actually managing dissolved gas.

Swain noted that, two meetings ago, the TGG asked the Environmental Cooperation Council for their support; they have now given that support to our efforts. I would like tomorrow's participants, based on what they know today, to use that support as a catalyst to really make things happen, and look at projects we can support with the resources we know we have available, Swain said.

What time period are you talking about? Phalen asked. The next six months to a year,

Swain replied – we've just begun the new fiscal year in Canada, so we actually have some money available.

Perhaps we could go around the room and talk to people about Project #1, and what needs are associated with that? Soscia asked. Perhaps we can build something that would be useful for tomorrow's discussion, at least. It was agreed that this will be a non-decisional discussion.

One participant suggested that we try to answer three questions about each project: where are we, what are the next steps, and what do we need from the various TGG parties to complete the project. He added that, in his view, more information is needed on the upstream projects – particularly Boundary, Box Canyon, Albeni Falls, Cabinet Gorge, Waneta and Grand Coulee.

Other comments on Projects 1 and 2 included the following:

- There is an obvious need to connect and coordinate between all of the various efforts at gathering and organizing dissolved gas and other water quality data to the CRIEMP process. It was noted that there are several U.S. activities that are similar to, but not as far advanced, as CRIEMP; it was agreed, therefore, to use the Canadian system as a model to be emulated.
- A variety of U.S. efforts which can provide useful data and information were identified: the Columbia/Snake Mainstem TMDL development process, FERC relicensing, BiOp implementation planning and the Corps DGAS study.
- It was agreed that the geographic scope of the planned project 1 and Project 2 activities will include the Canadian reach of the Columbia River and the main upper basin tributaries (including the Kootenai, Pend Oreille, Spokane River and Lake Roosevelt systems).
- Julia Beatty will take the lead on this activity, assisted by Soscia and Rick Parkin of USEPA.
- During discussion of the Access database Canada is using to organize monitoring data and aquatic species of concern, it was agreed that the TGG will draw on existing modeling information (Fidler, SYSTDG and FERC). Schmidt and Mike Schneider will continue to discuss model data needs, similarities and differences, and future model needs. EPA agreed to coordinate with all U.S. entities working on modeling and data collection and storage; Soscia said she will take the lead on the U.S. portion of this task.

IX. U.S. Federal Projects Biological Opinion.

Jim Ruff of the National Marine Fisheries Service briefed the TGG on the 2001 Federal Columbia River Power System (FCRPS) Biological Opinion, working from a series of overheads. Copies of Ruff's overheads are available as Enclosure J; please refer to this document for full details of Ruff's presentation. The main topics of Ruff's address included:

- An overview of the analytical approach used to develop the BiOp.
- A description of the programmatic, biological and physical performance standards that will be used to evaluate the federal action agencies' success in mitigating for the impacts of operation of the FCRPS on listed species.
- A description of the development of the one- and five-year water management, capital investment, water quality, O & M, offsite mitigation and research, monitoring and evaluation R M&E) implementation plans called for in the BiOp.
- A description of the various implementation forums at which hydro, offsite mitigation and R M&E actions will be discussed.
- The schedule for the development of the one- and five-year implementation plans.
- An overview of the Hydro reasonable and prudent activities (RPAs) called for in the 2001 BiOp.

One participant noted that, in the last two years, the provision of flows for chum spawning and rearing in the lower river has negatively impacted reservoir levels and the volume of water available for flow augmentation during the spring. Is there a process in the Biological Opinion in under which those kinds of upriver-downriver tradeoffs can be re-evaluated? he asked. The chum operation wasn't the only reason reservoir levels are as low as they are, currently, Ruff replied; it was only part of the reason. BPA had to meet load this winter as well; as it happened, the volume of flow BPA needed to keep the power system running was approximately the same as was needed for chum incubation below Bonneville. NMFS made a joint decision with the action agencies that both power and chum flows would be provided this fall and winter, he said. We then had to make a very difficult decision this March to cut off the chum flows in order to begin storing water, said Ruff; at that point, we estimate that only about 65% of the chum had emerged from the redds. The rest of the redds were dewatered. To answer your question, NMFS is concerned about current headwater storage reservoir levels, said Ruff, as is BPA; this is, as everyone is aware, an unusual year, given the drought and the extremely volatile energy market.

Ruff said the goal, at this point, is to refill Grand Coulee to elevation 1285 feet by June 30; it is likely that Libby and Hungry Horse will be no more than 20 feet from full by that date, given the current runoff forecast in those basins. He added that there will almost certainly be no spill at the Lower Snake River projects this spring, and very little at McNary; all of the fish collected will be transported. In other words, said Ruff, I don't foresee any dissolved gas problems this year.

Are there any special studies going on to get at in-river conditions in the drought year?

another participant asked. Yes, Ruff replied – we are making an extra effort to gather information in a number of crucial areas – fish survival, reach survival, transport survival, water temperature – this is a unique opportunity to gather data from the bottom end of the range, and it is important that we capitalize on it.

X. Mainstem Total Maximum Daily Loads.

Soscia explained that, for the past several years, the U.S. Environmental Protection Agency has been in preliminary discussions with the states and tribes of the Columbia Basin on the development of a Total Maximum Daily Load (TMDL) for the Columbia/Snake River mainstems. The TMDL will set up allocations for dissolved gas and water temperature, among other pollutants, Soscia explained; obviously, the major influence on these factors is the federal hydro projects. A memorandum of Agreement (MOA) has now been signed by Oregon, Washington, Idaho and EPA; the tribes have also been participating in those discussions as well, and the development of the TMDL is now underway.

Soscia and Rick Parkin provided a detailed overview of the TMDL development process, working from a pair of handouts: "Columbia and Snake River Mainstem TMDL Fact Sheet" (Enclosure E) and "Columbia and Snake River Mainstem TMDL: Draft Outline – Communication and Collaboration" (Enclosure F). Please refer to these documents, available from Kathy Ceballos at 503/230-5420, for details of Soscia's and Parkin's presentation.

XI. British Columbia Water Use Planning.

Les Swain began this discussion by distributing a letter from Jon O'Riordan of the B.C. Ministry of Environment, Land and Parks, chair of the Water Use Planning Steering Committee, explaining how the British Columbian Water Use Planning process works (Enclosure G). Swain directed those with an interest in finding out more about the Canadian Water Use Planning process to a pair of websites: the WUP section web page at http://www.elp.gov.bc.ca/wat/wup/wup.html and the B.C. Hydro WUP homepage at http://www.bchydro.bc.ca/wup/. Swain added that, at the next TGG meeting in Nelson, he will invite some of those who are actually doing the Water Use Plans to make a presentation.

Swain then provided a general overview of the Canadian Water Use Planning process, touching on the following main topics:

- **What is a Water Use Plan**? – a document prepared, through a broad and consultative process, for each facility, to provide information on all water uses, to help guide decision-makers and to lay out operating boundaries; once approved, it is a condition of a water license.
- **How are Water Use Plans developed**? B.C. Hydro is taking the lead on the Peace and Columbia River Water Use Plan.
- **What are the main stages of Water Use Plan development?** Preliminary information-gathering, development and evaluation of alternatives, review and decision,

implementation and follow-up monitoring.

- **What is the timeline**? The WUP process will be completed within three years.
- **What are the goals of the WUP process**? Better balance of values, more informed decisions, improved monitoring, regulation and enforcement, enhanced fish habitat and improved facility operations.

Will other dam operators be expected to go through this process as well? Colin Gray asked. Probably, but we need to get through the B.C. Hydro process first, Swain replied. Soscia suggested that, at the next TGG meeting in October, the time will be ripe for a progress report from both the U.S. TMDL developers and the Canadian Water Use Plan developers; there was general agreement that this would be extremely useful.

Following Swain's presentation, Bill Duncan provided an overview of the powerplant expansion proposal for the Canadian Columbia River projects, and the implications of these potential expansions on TGP production. He distributed a document, "TGP Reduction Through Powerplant Expansion: Possibilities for the Columbia River" (Enclosure H), which lays out this program in detail. Duncan asked whether there was any interest, on the TGG's part, in pursuing serious consideration of this proposal on the U.S. side of the border; Soscia replied that EPA would be interested in doing so, and said she will share this proposal with others at her agency.

XII. Open Discussion of TGG Project Direction, Scope and Objectives.

Phalen said the steering committee met at the end of yesterday's session; he provided a brief overview of some of the major points developed during that meeting, including:

- The need to make certain there is a well-defined geographic focus for the TGG's efforts – above the tailrace of Grand Coulee Dam.
- The need to create realistic and doable TGG tasks and timelines.
- The need to ensure good communication, including the identification of a lead person for each task and the development of protocols to ensure timely communication and review of work products.

The group briefly discussed the data gaps associated with Projects 1 and 2; it was noted that a brief statement to the effect that these data gaps exist needs to be included in the TGG's proposed two-year action plan. It was agreed that the Canadian representatives will distribute the draft outline of the CRIEMP report on Projects 1 and 2, prior to the next TGG meeting; the CRIEMP report will function as a template for future TGG work in this area, and will help connect the CRIEMP process with parallel U.S. processes.

Phalen then moved on to Project 3, noting that the only responsibility that has been assigned in connection with this activity is that the steering committee has agreed to develop a framework for Project 3 completion in time for distribution at the next TGG meeting in October.

With respect to Project 4, Phalen said Les Swain will be taking the lead on producing a

concise summary of the Treaty implications for the Columbia Basin.

The discussion returned to the specific work tasks and products associated with each of the four major TGG projects; Soscia distributed a document titled "Transboundary Gas Group: Proposed Two-Year Action Plan," (Enclosure D) containing detailed information about these tasks, the parties responsible for their completion and the timeline for each effort (copies of this document are available upon request from Kathy Ceballos at 503/230-5420).

XIII. Project #4: Existing Treaties Implications for Dissolved Gas Management in the Columbia River Basin.

Swain updated the TGG on the results of his investigations into the Treaty implications for dissolved gas; he touched on the background for this effort, and noted that his agency has hired an attorney, Bob Goldschmidt, part-time specifically to investigate this issue. Goldschmidt has only been on staff for three weeks, so he has only recently begun work on this task; within the next month, he will be meeting with representatives from the Bonneville Power Administration and B.C. Hydro.

Swain touched on the background and goal of this effort, as well as what the ultimate work product will be – a paper laying out the attorney's interpretation of what the Treaties say and what their implications are, in terms of what they say about dissolved gas. The topics to be covered by the Columbia River Treaty analysis include the dams subject to the Treaty, Canadian Treaty obligations, U.S. Treaty obligations, potential conflicts with domestic laws, environmental standards or other agreements an the role of the International Joint Commission.

The intent is to develop a draft of this analysis within the next three to four months, said Swain; that draft will then be circulated for review within the Ministry of Environment, Land and Parks. Swain asked that the TGG provide him with any additional suggestions as to the content of the analysis as soon as possible. At today's meeting, NAFTA, the Fisheries Act and First Nations issues were mentioned as potential additions to the scope of the Treaty analysis.

XIII. Open Discussion of TGG Project Direction, Scope and Objectives.

Phalen reiterated that the draft Treaty analysis report (Project 4) will be available for TGG review and comment in about four months; there will be an opportunity to present comments at the October TGG meeting. Swain encouraged the other TGG participants to submit their comments to him prior to the next TGG meeting, if possible.

With respect to Project 3 (identify structural and operational alternatives), Phalen reiterated that the TGG steering committee has been tasked to produce a framework for Project 3 completion in time for discussion at the October TGG meeting.

With respect to Project 1 (characterize existing dissolved gas conditions in the transboundary area), Phalen said the primary task facing the TGG is connecting the CRIEMP

process with parallel processes on the U.S. side of the border – TMDL development, FERC relicensing etc. The goal, he said, is to develop a unified approach. After a few minutes of discussion, it was agreed that Julia Beatty will take the lead on this project, with assistance from Soscia and Parkin.

The group devoted a lengthy discussion to Project 2 (identify data and information needs for screening models); ultimately, it was agreed that, on the U.S. side, a subcommittee, to include representatives from EPA, the Corps and the Washington Department of Ecology, will be set up to build on existing efforts – FERC relicensing, the TMDL process, the Corps' data management effort in support of the Water Quality Plan – to compile the data needed for modeling purposes. The subcommittee will circulate a report on its activities prior to the next TGG meeting, and there will be a presentation on this effort at the TGG's October meeting.

XVI. Next TGG Meeting Date.

The next meeting of the Transboundary Gas Group was set for October 24-25 in Nelson, B.C. Agenda items for this meeting include progress updates on Projects 1-4, updates on the Water Use Planning and TMDL development processes, and a report on the potential Lake Roosevelt Superfund study. Chuck Rice volunteered to take the lead on forming an ad hoc "support" committee; Sharon Churchill volunteered to develop a single spreadsheet identifying data availability, data gaps and data needs for each project in the Canadian and U.S. systems. Meeting notes prepared by Jeff Kuechle, BPA contractor.